

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (canceled)
2. (previously presented) A dose application counter according to claim 15 for an injection device of the form having a dose setting knob rotatable with respect to the body of the device, the counter comprising a rotatable ring with an annular array of projections co-axial with the knob, the minimum dose requiring the knob to be turned from a zero position through an angle at least as great as the angular spacing of adjacent projections, an element rotatable with the knob and spring-urged to engage a projection when the knob is at zero, and a cam fixed to the body of the device and arranged to disengage said element from the ring when the projection has been pushed round by the element through a predetermined angle and to maintain that disengagement on further rotation, the ring and body having external markings to indicate the circumferential advances of the ring, wherein the application of a dose and the consequent reversion of the knob to its zero position brings said element back to engage another projection while the ring remains static.

3. (original) A dose counter as claimed in claim 2, wherein the ring is positioned between the knob and the body of the device.

4. (previously presented) A dose counter as claimed in claim 2, wherein the projections are formed by ratchet teeth internal of the ring, and the element that engages the teeth is a peg that extends in the axial direction beyond the ring for co-operation also with the cam.

5. (original) A dose counter as claimed in claim 4, wherein the peg is at the free end of a generally spiral finger whose other end is rotationally fast with the knob, the finger being of a plastics material and being so shaped and dimensioned that it acts as a spring.

6. (previously presented) A dose counter as claimed in claim 2, wherein the cam is in the form of another co-axial ring, but with its circular aperture expanded outwards over a sector corresponding to the pitch between adjacent teeth, the radius of most of the aperture being less than that of the circle tangential to the tips of the teeth.

7. (previously presented) A dose application counter according to claim 15, for an injection device of the form having

a non-rotatable plunger retractable from the rear end of a syringe housing to set a dose and movable forwards into the housing on ejection of the dose, the counter comprising a unidirectionally rotatable sleeve with multi-start internal screw threading carried by the housing, a projection resiliently carried by the plunger, which passes through the sleeve and which, through its projection and the screw threading, generates rotation of the sleeve as it is retracted, the minimum dose requiring the projection to traverse at least the full axial length of the sleeve and the screw threading being shaped so that the resilient projection jumps threads on forward movement of the plunger, with the sleeve held against counter-rotation, and external markings on the sleeve and housing to indicate the circumferential advances of the sleeve.

8. (original) A dose counter as claimed in claim 7, wherein the unidirectional rotation is achieved by having a ratchet engagement between the sleeve and the housing.

9. (previously presented) A dose counter as claimed in claim 7, wherein the screw threading comprises coarse pitch square section grooves and the length of the sleeve is such that the rear end of each part-helical groove registers in the axial direction with the forward end of the adjacent groove.

10. (original) A dose counter as claimed in claim 9, wherein the sides of the grooves that face circumferentially and slightly rearwardly are chamfered at their rear ends so that, as the plunger moves forward, the projection hits a sloping surface that wedges the projection inwards onto the land area between adjacent grooves, so that the projection will then snap into the adjacent groove.

11-12. (cancelled)

13. (previously presented) A dose counter as claimed in claim 3, wherein the projections are formed by ratchet teeth internal of the ring, and the element that engages the teeth is a peg that extends in the axial direction beyond the ring for co-operation also with the cam.

14. (previously presented) A dose counter as claimed in claim 13, wherein the peg is at the free end of a generally spiral finger whose other end is rotationally fast with the knob, the finger being of a plastics material and being so shaped and dimensioned that it acts as a spring.

15. (previously presented) A dose application counter for use with an injection device with a dose setting element which in use is moved from an initial position to set a dose, comprising a

counter member connected by a lost motion connection to the dose setting element, wherein movement of said dose setting element in use by and beyond an amount to set an effective dose causes an incremental movement of said counter member to register indication of a usage of the injection device, and return of said dose setting element to said initial position is not effective to move said counter member.

16. (new) A dose application counter for use with an injection device with a dose setting element which in use is moved from an initial position by a selected amount to set a dosage volume, said dose application counter comprising:

a counter member connected by a lost motion connection to the dose setting element, wherein movement of said dose setting element in use by and beyond an amount to set an effective dosage volume causes a preset increment of movement of said counter member that is independent of the amount of said dose setting movement, thereby to register indication of a usage of the injection device, and return of said dose setting element to said initial position is not effective to move said counter member.

17. (new) A dose application counter for use with an injection device with a dose setting element which in use is moved from an initial position by a user-selected amount to set a dosage volume, said dose application counter comprising:

a counter member being indexed relation to said device by preset increments to register a count of doses; and

a mechanism for indexing said counter member by a preset increment in response to movement of said dose setting element in use by and beyond a magnitude to set an effective dosage volume, the preset indexing increment being independent of said magnitude of movement and the dose setting element,

said mechanism including a driver surface that moves with said dose setting element and engages a drive surface on said counter member to move said counter member through said increment and to disengage on further movement.

18. (new) A dose counter as claimed in claim 15, wherein the lost motion connection comprises:

an indexer configured to engage internal teeth of a coaxial ring.

19. (new) A dose counter as claimed in claim 18, wherein the indexer comprises:

a hub with internal splines configured to engage a shaft of a knob;

a finger bearing on sides of several of the internal teeth, the finger being attached to the hub via a radial projection; and

a peg attached to the finger, the peg being configured to turn the coaxial ring by pushing on one of the teeth.

20. (new) A dose counter as claimed in claim 16, wherein the lost motion connection comprises:

an indexer configured to engage internal teeth of a coaxial ring.

21. (new) A dose counter as claimed in claim 20, wherein the indexer comprises:

a hub with internal splines configured to engage a shaft of a knob;

a finger bearing on sides of several of the internal teeth, the finger being attached to the hub via a radial projection; and

a peg attached to the finger, the peg being configured to turn the coaxial ring by pushing on one of the teeth.

22. (new) A dose counter as claimed in claim 17, wherein the mechanism comprises:

an indexer configured to engage internal teeth of a coaxial ring.

23. (new) A dose counter as claimed in claim 22, wherein the indexer comprises:

a hub with internal splines configured to engage a shaft of a knob;

a finger bearing on sides of several of the internal teeth,

the finger being attached to the hub via a radial projection; and
a peg attached to the finger, the peg being configured to
turn the coaxial ring by pushing on one of the teeth.